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Rising Costs and Delays Doom New Nuclear Reactors in South Carolina

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A utility consortium that had been building two new nuclear power reactors in South Carolina announced July 31, 2017, it is abandoning the project because of growing cost overruns and schedule delays. Completion of the two additional reactors at the existing V.C. Summer Nuclear Station near Jenkinsville, SC, had been in doubt since Westinghouse Electric Corporation, the lead contractor for the project, filed for bankruptcy reorganization on March 29, 2017. Westinghouse also had been building two new reactors at the Vogtle nuclear plant in Georgia. The lead owner of that project, Southern Company, has taken over construction management from Westinghouse while the owners decide—reportedly by the end of August—whether to complete the new reactors.

The two reactors under construction at the V.C. Summer plant are owned 55% by South Carolina Electric and Gas (SCE&G), an investor-owned, regulated utility, and 45% by Santee Cooper, a state-owned utility. In their separate July 31 announcements that they would immediately halt further construction on the project, the two utilities cited multibillion-dollar cost increases and years of further delays that would greatly increase interest costs and push startup of the new reactors far beyond 2020, the deadline for receiving federal nuclear production tax credits. A tax credit extension has been passed by the House in the 115th Congress but has not been taken up by the Senate. SCE&G's statement said the company had been considering finishing only one of the two new units, but that Santee Cooper was unwilling to continue with either. Santee Cooper's statement said that "the costs of these units are simply too much for our customers to bear." About 5,100 construction workers will lose their jobs at the V.C. Summer project, along with 600 employees who were preparing to operate the new units, according to an SCE&G briefing to the South Carolina Public Service Commission (PSC) on August 1, 2017.

SCE&G estimated at the August 1 briefing that its share of the construction costs at the two V.C. Summer units, if they were completed, would total $9.9 billion. Santee Cooper estimated in its July 31 statement that the total cost of its 45% share of the project would be $8.0 billion, excluding $3.4 billion in interest. Adding the two companies' estimates provides a total construction cost of $17.9 billion, not including Santee Cooper's interest calculation. SCE&G estimated that the first of the new units could be completed by 2022 and the second in 2025. Those recent construction costs and schedules compare to initial estimates in 2008 that the first new unit would be completed in 2016 and the second in 2019, at a total cost of $9.8 billion to build both units, including an inflation allowance. The two utilities have spent about $9 billion on the project so far, according to the statements and briefings cited above.

The four reactors in South Carolina and Georgia were the first nuclear power projects to begin construction in the United States since 1978. Some had anticipated when Westinghouse signed the contracts for the new reactors in 2008 that they would help lead a U.S. "nuclear renaissance." Including the four units at Summer and Vogtle, license applications for 28 new power reactors were submitted to the

Nuclear Regulatory Commission (NRC) from 2007 to 2009. Reasons for the renewed interest in nuclear power included rising fossil fuel prices, especially natural gas, the anticipation of federal controls on carbon dioxide (which nuclear plants do not emit), and federal support for licensing and design. In addition, electricity produced by new nuclear plants that were placed in service by 2020 could receive a tax credit, as noted above, under Section 1306 of the Energy Policy Act of 2005 (P.L. 109-58).

Since those license applications were submitted, the economic conditions for nuclear power changed dramatically. Natural gas costs for electric power generation dropped sharply after their peak in 2008, driven by growth in U.S. unconventional gas production from the expanded use of advanced extraction technologies such as hydraulic fracturing. The subsequent growth of low-priced gas-fired electricity generation challenged the business case for new nuclear plants and contributed to the shutdown of several existing reactors. Moreover, federal legislation to reduce carbon dioxide emissions has not been enacted, and U.S. annual electricity demand has been flat during the past decade, reducing the perceived need for large, long-term generation investments.

Of the 28 license applications for new reactors submitted during the past decade, 14 were withdrawn or suspended by the applicants, 12 were approved by the NRC (including the four at Summer and Vogtle), and two are still under review. Except for Summer and Vogtle, no utility has decided to move ahead with construction at any of the proposed new plants. Cancellation of the two new units at the Summer plant leaves only the two Vogtle reactors under construction in the United States.

The Summer and Vogtle plants are in states with traditional cost-of-service-based regulation, in which state regulatory commissions set electricity rates sufficient to recover approved utility costs plus a reasonable rate of return. No nuclear construction has occurred in states that do not use traditional rate regulation. In such states, where wholesale electricity rates are set by competitive markets, the recovery of costs for new power plants is not guaranteed.

Westinghouse had signed fixed-price contracts with the owners of the four new nuclear units at Summer and Vogtle, but the company filed for bankruptcy when it became clear that the cost overruns would be far greater than it could cover. The bankruptcy filing allowed Westinghouse to reject the price-guaranteed contracts, transferring most of the cost-overrun burden to the plant owners. Japanese industrial conglomerate Toshiba Corporation, Westinghouse's parent company, had guaranteed the Westinghouse nuclear construction contracts but is itself facing financial difficulties. After several months of negotiations, Toshiba agreed on July 27, 2017, to pay $2.168 billion to the V.C. Summer owners through 2022. The Vogtle owners are supposed to receive payments from Toshiba totaling $3.68 billion through 2021, according to a filing with the Securities and Exchange Commission.

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